ECCOMAS CFD 06

European Conference on Computational Fluid Dynamics

Egmond aan Zee, The Netherlands
September 5 – 8, 2006

ECCOMAS

TU Delft

OBJECTIVES

The goal of the ECCOMAS CFD conferences is to periodically bring together researchers, industrialists and students working in broad parts of computational science and engineering. The focus is on computational fluid dynamics, computational acoustics, computational electromagnetics, computational mathematics and related fields in the computational sciences. A forum is provided for fostering exchange of information and experience in these rapidly developing fields, and to promote transfer of knowledge and technology between research and industry on a European and global scale. Advances made in numerical methods, software development and computing technology are brought to bear on challenges posed by mathematical modelling in the applied sciences. Young researchers find a good opportunity to widen their perspective on the dynamic and exciting field of computational science and engineering.

The conference includes invited lectures, mini-symposia and peer-reviewed contributed papers. The link between research and industry is fostered by special technology sessions.

Previous ECCOMAS CFD conferences have been held in Stuttgart (1994), Athens (1998) and Swansea (2001). Furthermore, computational fluid dynamics, computational mechanics and related fields have been a major topic at the ECCOMAS congresses held in Brussels (1992), Paris (1996), Barcelona (2000) and Jyväskylä (2004).

Information on ECCOMAS can be found at: http://www.cimne.upc.es/eccomas/.
The website of the conference is: http://pcse.tudelft.nl/eccomas2006/

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CALL FOR PAPERS

Conference Website

The conference website http://pcse.tudelft.nl/eccomas2006/ will give updated information on the Scientific Program and practical arrangements of the conference.
Registration to the conference will only be available through the website.

Minisymposia

Proposals for Minisymposia are welcomed. A Minisymposium consists of a 30-minute introductory lecture and four 20-minute lectures, for a total duration of two hours. Speakers should not all come from the same institute. A Minisymposium proposal should consist of: name of organizer, topic of the Minisymposium, names of speakers, and preferably (working) titles of the presentations. Proposals should be sent by email to the conference secretariat before January 15, 2006. The Minisymposium will be chaired by the organizer, who is responsible for the acceptance, correct format and timely collection of abstracts and full papers, that will be published in the same way as the contributed presentations, see below. The deadline for submission of abstracts and full papers of Minisymposia is May 15, 2006.

Contributed presentations

One-page abstracts of 20-minute presentations on topics related to the conference themes are invited. Authors are kindly requested to follow the submission procedure outlined at the conference website, and to use the abstract template available from the conference website. Abstracts will be peer-reviewed. Abstracts of accepted contributions will appear in the conference book that will be available at the beginning of the conference. The full papers will be published in the conference proceedings, to appear on a CDROM that will be available at the start of the conference. **For the full papers, the templates available at the conference website must be used**. Only papers from participants registered before June 15, 2006, will be published.

> **Dates to remember**
> - Deadline for Minisymposium proposals: January 15, 2006
> - Deadline for one-page abstracts of contributed presentations: January 15, 2006
> - Notification of acceptance: March 1, 2006
> - Deadline for full papers: May 15, 2006
> - Deadline for early registration: June 15, 2006
> - Deadline for registration of contributors to proceedings: June 15, 2006

Conference Exhibition

The conference organisers offer exhibition space to interested companies and co-operation partners. The Exhibition will be situated in an area near the main session rooms. The ECCOMAS CFD 2006 Exhibition will include the following exhibits:
- Software, hardware
- Books, journals
- Industrial services, consulting

For more information please contact the Secretariat:
Email: eccomascfd2006@math.tudelft.nl

Scientific Programme

The scientific programme consists of invited plenary keynote presentations by renowned experts, Minisymposia, Special Technology Sessions and refereed contributed papers.

Invited Speakers

R. de Borst, Delft University of Technology
    Multiscale models in computational fluid and solid mechanics
E. Chaput, Airbus, Toulouse
    Design challenges in the Airbus A380 and A350 projects
A. Fogelson, University of Utah
    Computational investigations of the role of flow in thrombosis
A.D. Gosman, Imperial College London
    Computational Fluid Dynamics, title to be announced
S. Idelsohn, CIMEC-INTEC, Santa Fe (Argentina)
    The Particle Finite Element Method: an efficient and accurate method to solve CFD problems including free-surfaces and breaking waves
G. Lube, University of Göttingen
    Stabilized FEM for incompressible flows - A critical review and new trends
E. Michielssen, University of Michigan, Ann Arbor

Fast time domain integral equation solvers: a maturing technology?
C.L. Morfey, University of Southampton
Modelling sound radiation of turbulent jets and wall layers
P. Rostand, Dassault, Saint Cloud,
Industrial Applications, title to be announced
D. Schwamborn, DLR, Göttingen
The DLR TAU-code – Recent applications in research and industry

CONFERENCE TOPICS

1. Computational fluid dynamics
Aerodynamics
Aerothermodynamics
Atmospheric chemistry
Boundary layers and transition
Combustion and reactive flows
Environmental flows
Flow control and optimization
Flows with heat transfer
Fluid-structure interaction
Free boundary flows
Grid generation and adaptivity
High speed flows
Internal flows
Microfluidics
Multiphase flows
Non-Newtonian and complex fluids
Numerical schemes
Parallel computing in CFD
Physiological flows
Turbulent flow simulation
Unsteady flows

2. Computational Acoustics
Aero-acoustics
Direct and inverse scattering problems
Fluid and structure acoustics
Noise control
Noise abatement in aeronautics
Noise abatement in the automotive industry
Nonlinear acoustics
Room acoustics
Smart materials and noise reduction
Vibro-acoustic modelling

3. Computational Electromagnetics
Antennas
Composite and complex media
Electromechanical systems
EM analysis of integrated circuits
Frequency selective and absorbing surfaces
Hybrid and multicriteria optimization
MEMS modelling
Optimal shape design
Radar cross section
Scattering and inverse scattering
Semiconductor device modelling
Superconducting devices
Waveguides

4. Computational Mathematics and Numerical Methods
Dynamical systems
Evolutionary algorithms
Grid computing
Grid generation
Image processing
Mathematical finance

Numerical linear algebra
Parallel computing
Scientific visualization
Signal processing

5. Optimization and Control
Applications, methods and software
Automatic differentiation in CFD
Data assimilation and model coupling
Evolutionary methods
Inverse problems
Neural networks
Optimal control of differential equations
Optimal design
Reduced order models and low-complexity optimization
Shape optimization for fluids

6. Computational Methods in Life Sciences
Physiological flows
Biomathematics
Biomedical simulation
Biomedical devices
Ecology
Epidemiology
Environmental sciences
Medical technology
Modelling and simulation
Natural hazards
Neurobiology
Population dynamics
Visualization

7. Industrial Applications
Aero-acoustics
Aeronautics
Automotive engineering
Chemical engineering
Electrical engineering
Electronics
Energy technology
Environment
Fluid-structure interaction
Image recognition and enhancement
Medical applications
Microdevices
Naval architecture
Noise abatement
Process control
Scientific visualization
Software development
Space technology
System engineering
Traffic and transport
Turbomachinery
Vehicle design and transport
Virtual reality

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CONFERENCE VENUE

The conference will take place at Hotel Zuiderduin in Egmond aan Zee, The Netherlands. The hotel is located almost at the beach of the picturesque seaside village of Egmond aan Zee, at 45 km from Amsterdam.

The borough of Egmond consists of a trio of villages. Egmond-Binnen is the farthest inland, surrounded in spring by colorful fields of bulbs in bloom. The historical Adelbertusfield was already cultivated in the ninth century by monks from ancient Egmond Abbey. The Abbey was laid waste in the sixteenth century and rebuilt several times since. Today Benedictines live there. They welcome visitors interested in their candlemaking activities.

In Egmond aan den Hoef one finds the Historical Information Centre. Many sights here remind the visitor of times past, in which the famous counts of Egmond played a prominent role. Only remnants of the castle are left, but the chapel is still intact and can be visited. Egmond aan Zee started as a medieval fishing village. The scene is dominated by the "Jan van Speijk" lighthouse, named after a naval hero. The modern station of the Royal Dutch Rescue Service has replaced the shed that housed the rowing boat in which volunteers risked their lives to get sailors off ships in distress among the dangerous shoals along the coast. The wide sandy beach invites swimmers, surfers and sunbathers, and features pavilions and other facilities. Alfresco pubs and restaurants, a subtropical swimming paradise, sports facilities and a lively shopping district make for a perfect holiday

atmosphere. Where the village ends, the natural beauty of the Noord-Holland Dune Reserve begins.

Registration and fees

On-line registration and instructions for payment of fees are available at the conference website pcse.tudelft.nl/eccomas2006/

The early registration rates are applicable if payment is received before July 25, 2006.

	Early	Late
Member ECCOMAS associations	€ 425	€ 475
Non-members	€ 475	€ 525
Students	€ 300	€ 350
Accompanying persons (family members)	€ 100	€ 100

The student fee applies only to full-time PhD and MSc students. A copy of the student ID-card or a letter from the advisor confirming studentship should be faxed to the conference secretariat.

Accompanying persons must be family members.

The fee for members, non-members and students includes:
- o Book of Abstracts
- o Proceedings on CDROM
- o Excursion and conference dinner
- o Lunches
- o Coffee/tea during breaks

The accompanying person's fee includes the excursion and conference dinner.

Registration cancellation

For written cancellations received before July 1, 2006, registration fees will be fully refunded. For written cancellations received between July 1 and August 1, the registration fee is € 100. After August 1 no refund will be made.

Accommodation

Hotel Zuiderduin offers you a special conference arrangement of:
- o Single room: € 247,50 per person
- o Double room: € 192,50 per person

This arrangement includes:
- o 3 Hotel nights with breakfast
- o 3 Dinners (buffet, different themes)
- o Free use of swimming pool and sauna

In Hotel Zuiderduin double rooms have either double or twin beds and all hotel rooms have a shower or bath. All rooms have internet connection.

The hotel restaurant is prepared to accommodate special dietary requests.

Other facilities in the hotel are indoor pool, sauna, squashcourt, beaty parlour, hairdresser, fitness center, bistro pub

The hotel arrangement can be booked at: www.zuiderduin.nl

USEFUL TO KNOW

Climate:
The Netherlands has a sea climate. In September the weather can be unstable, with temperatures between 16 and 23 degrees.

Currency:
The local currency is Euro (divided into 100 cents).
International credit cards are accepted all over the Netherlands in department stores, museums and most shops.

Dutch Visa regulations:
The Netherlands belongs to the European Union. EU citizens and most other nationals do not need an entry visa to the Netherlands. For visa regulations contact your travel agent or the nearest Dutch embassy or consulate.

Health regulations:
No vaccinations are required when entering the Netherlands from any other country.

Insurance:
The organizers cannot be held responsible for injury to con-ference attendees or for damage to or loss of their personal belon-gings, regardless of the cause. Attendees are advised to make their own insurance arrange-ments.

ABOUT ECCOMAS

The European Community on Computational Methods in Applied Sciences (ECCOMAS) was created in 1993 with the aim of providing a high level of coordination of scientific meetings and related activities in Europe in the field of computational methods for the applied sciences. The ECCOMAS organization groups together European regional or national organizations of researchers in computational modelling, numerical methods and simulation in engineering and applied sciences.
ECCOMAS is affiliated with the International Association for Computational Mechanics (IACM) (www.iacm.info).
The website of ECCOMAS is www.cimne.upc.es/eccomas/

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ACME	Association for Computational Mechanics in Engineering, United Kingdom
AIMETA	Associazione Italiana di Meccanica Teorica e Applicata, Italy

APMTAC	Associação Portuguesa de Mecânica Teórica, Aplicada e Computacional, Portugal
BFIT	Board of the Swiss Federal Institutes of Technology, Switzerland
BNCM	Belgian National Committee for Theoretical and Applied Mechanics, Belgium
CEACM	Central European Association for Computational Mechanics, Central Europe
CSMA	Computational Structure Mechanics Association, France
ERCOFTAC	European Research Community on Flow Turbulence and Combustion, Belgium
FMS	Finnish Mathematical Society, Finland
GACM	German Association of Computational Mechanics, Germany
GAMM	Gesellschaft für Angewandte Mathematik und Mechanik, Germany
GAMNI/SMAI	Groupe pour l'Avancement des Méthodes Numériques de l'Ingénieur / Société de Mathématiques Appliquées et Industrielles, France
GRACM	Greek Association for Computational Mechanics, Greece
HSTAM	Hellenic Society for Theoretical and Applied Mechanics, Greece
IACMM	Israel Association of Computational Methods in Mechanics, Israel
IMA	Institute of Mathematics and its Applications, UK
ISSEC	Irish Society of Scientific and Engineering Computations, Ireland
NMC	Netherlands Mechanics Committee, The Netherlands
NOACM	Nordic Association for Computational Mechanics, Denmark, Norway, Finland, Estonia, Latvia, Lithuania, Sweden
ONIV	Association for Scientific and Engineering Computations, Russia
PACM	Polish Association for Computational Mechanics, Poland
SEMA	Sociedad Española de Matemática Aplicada, Spain
SEMNI	Sociedad Española de Métodos Numéricos en Ingeniería, Spain
SIMAI	Società Italiana di Matematica Applicata e Industriale, Italy
TNCTAM	Turkish National Committee on Theoretical and Applied Mechanics, Turkey

Welcome to the Netherlands.

…….with its canals, clogs, tulips, windmills & bikes...

The Netherlands occupies an area of 41,160 square kilometers and is home to over 16 million people. Partly reclaimed from the waters of the North Sea, it is Europe's most densely populated country. The Netherlands enjoyed a golden age from around 1580 to 1740, when trade and manufacturing flourished, and the United East India Company and the West India Company sent ships to the Far East in search of spices and other exotic goods, while colonising the Cape of Good Hope, Indonesia, Surinam, the Antilles, and New Amsterdam (now New York). Today, only the Netherlands Antilles is an autonomous part of the Kingdom of the Netherlands. With half of the country lying below sea level, the struggle to keep the North Sea at bay has been a constant feature in the history of this unique country. Disaster struck in 1953, when a high spring tide accompanied by a severe storm broke the dykes in Zeeland. As a consequence 1835 people drowned. To make sure such a tragedy would never occur again, the Delta Project blocked the southwest river deltas using a network of dams, dykes and an impressive 3.2km storm surge barrier.

The Dutch have brought forth many famous painters, including Rembrandt, Van Gogh, Vermeer and Mondriaan. The Rijksmuseum in Amsterdam showcases their works. Amsterdam is one of the world's most interesting cities. With canals and monuments, gabled houses, countless museums, arts festivals, bikes and an irrepressible joie de vivre, you'll want to stay and stay. However, don't ignore places like Delft (home to Delft University of Technology), Leiden and Haarlem with their old canal-girdled centres, and The Hague - elegant home of the Dutch government and the Royals. The town of Delft is also famous for its distinctive blue and white pottery. Stroll along the canals, enjoy first-rate beer, hire a bike and explore this ultimate bicycle-friendly country.

On www.alltravelholland.com you can find much interesting information.

Conference secretariat

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